Corinex

CableLAN Adapter

Corinex

Manual

Declaration of Conformity

CE

Model: Corinex CableLAN Adapter

Manufacturer:

Corinex Communications Corp.
World Trade Center
404-999 Canada Place
Vancouver B.C.
Canada V6C 3E2

Directives which Conformity is Declared:

EMC: 89/336/EWG
LVD: 73/23/EEC
93/68/EEC

Standards which Conformity is Declared:

EN 55022
EN 55024
EN 61000-3-2/A14
EN 61000-3-3
EN 60950

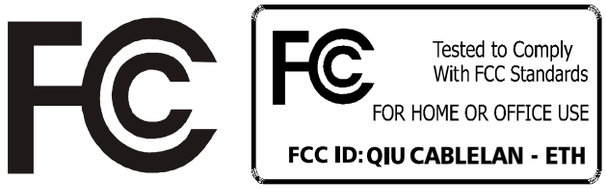
The undersigned hereby declares the above specified equipment conforms to the above directives and standards.

Signature: ..... Place/Date: **2003**

Printed name: **Peter Sobotka** Position/Title: **CEO**

Declaration of Conformity

For US Market Only



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This device complies with Part 15 rules. Operation is subject to the following two conditions:
1) this device may no cause harmful interference, and
2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules.

User Warning !

Any changes or modification to said product not expressly approved by Corinex could void the user's authority to operate the equipment.

Signature: ..... Place/Date: **2003**

Printed name: **Peter Sobotka** Position/Title: **CEO**

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1 Introduction

1.1 Overview

The *Corinex CableLAN Adapter* is a network interface adapter, using the coaxial cable as a medium for communications. After successful installation, the indoor CableLAN network behaves like a traditional LAN for computers. The *Corinex CableLAN Adapter* supports up to 14 Mbps network speed.

The product keeps network maintenance cost low and eliminates usage barriers while there is no need for additional wiring. It is highly integrated and requires no other external electronic components.

1.2 About this Manual

This Owner's Manual is intended to provide sufficient information to help you understand how to successfully install *Corinex CableLAN Adapters* to meet your networking needs. With the information in this manual, you should be able to:

- Analyze your network efficiency
- Plan the configuration of *Corinex CableLAN Adapter* options
- Install and configure your *Corinex CableLAN Adapter* according to your plan
- Verify and optimize your *Corinex CableLAN Adapters'* performance

2 Installation Guide

2.1 What this Package Contains

When you receive your *Corinex CableLAN Adapter,* check to be sure that your package contains:

- Corinex CableLAN Adapter
- AC cord
- Ethernet cable
- Coax T-splitter
- Coax jumper cable
- This manual
- Installation CD

As we are constantly innovating our products, it can happen that we have newer versions of software tools included on the installation CD. If you want to check (and download) the latest versions of the software for your Corinex product, go to

www.corinex.com/download

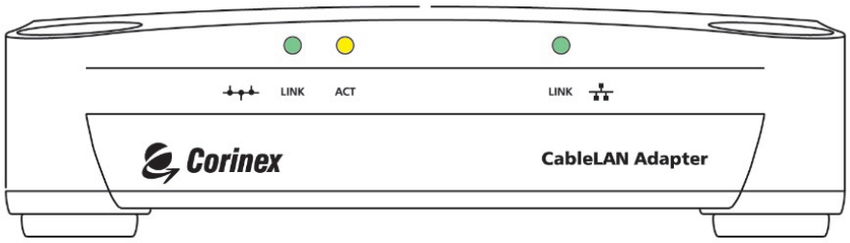
We also advise you to visit our Corinex Authorized Powerline Partners Program web page **(cappp.corinex.com)**, as you can find there valuable information about complex applications and installations, along with the partners in your area, who are providing installation services.

2.2 System Requirements

- A Macintosh or IBM compatible PC
- One available 10/100 Mbps Ethernet port for connection
- CD-ROM drive
- Windows 98/ME/2000/NT/XP, Mac OS X or Linux operating system

2.3 Physical Description

Front Panel

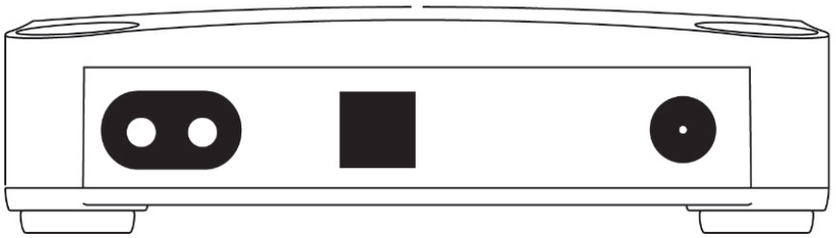


LED Definition

(LEDs from left to right)

CableLAN		
LINK: Green	On:	Link
ACT: Yellow	On:	Link
	Off:	No Link
	Blinking:	receiving/transmitting data
Ethernet		
LINK: Green	On:	Link
	Blinking:	receiving/transmitting data

Rear Panel



Connectors Definition

(Connectors from left to right)

Power Inlet:	The device is equipped with internal power supply
Ethernet LAN Port:	For linking computers or other Ethernet devices, e.g. hub/switch
F type CableLAN Connector:	For the coaxial cable connection

2.4 Installing the CableLAN Adapter

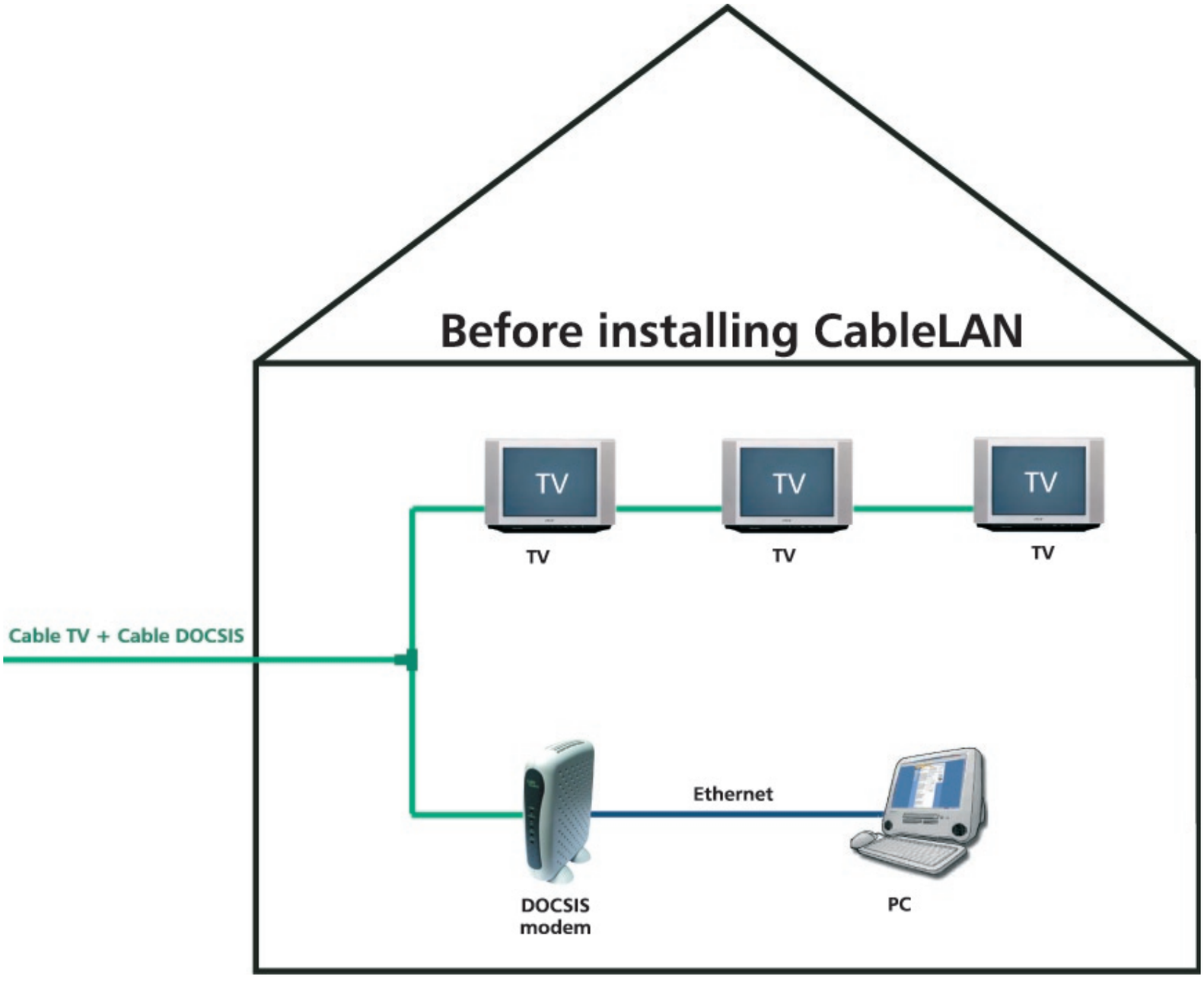
To connect the *Corinex CableLAN Adapter* to your computer, follow the steps listed below:

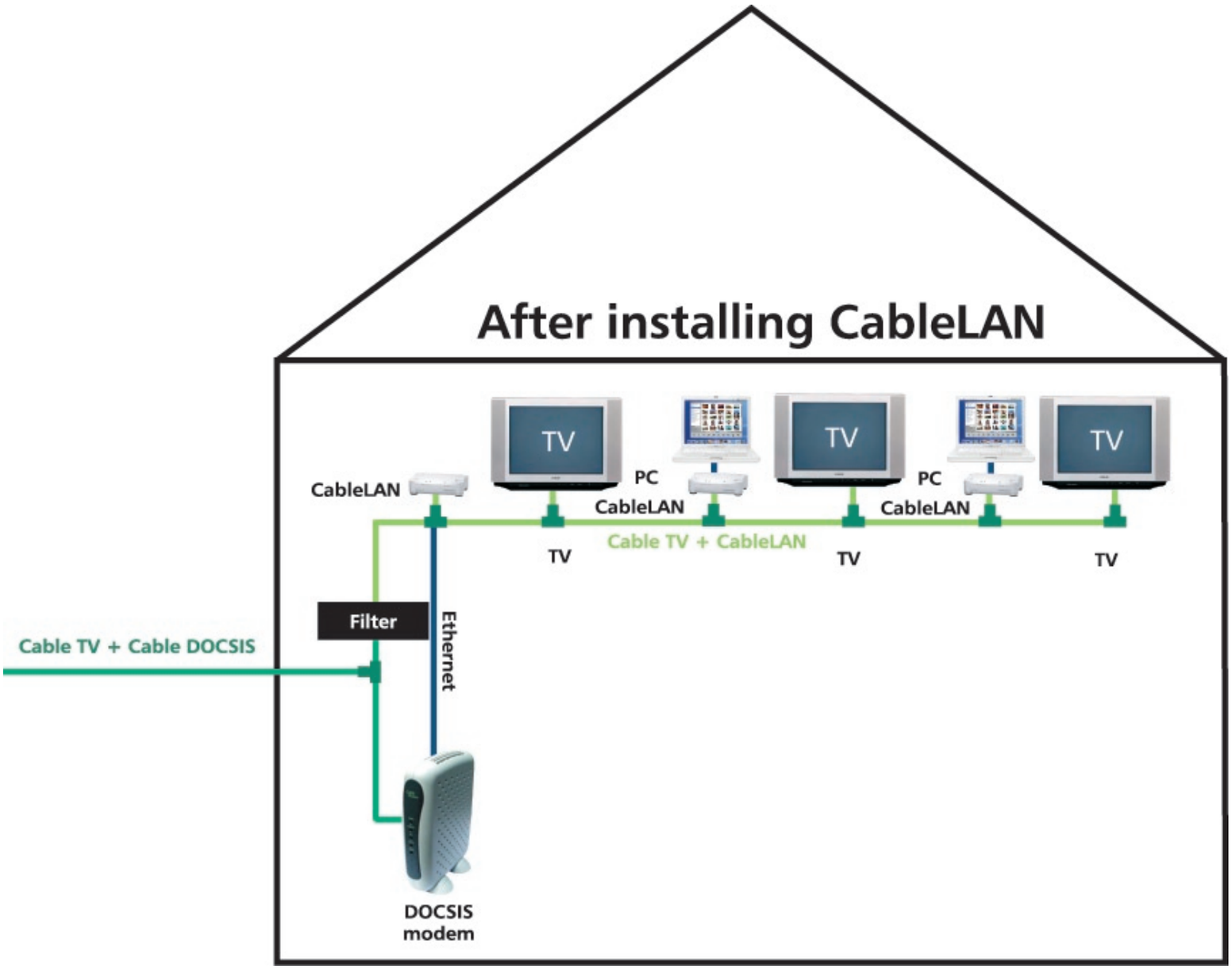
1. Plug the supplied AC cord into the *Corinex CableLAN Adapter* and after that, into an AC outlet.
2. Plug the coax cable into the *Corinex CableLAN Adapter.*
3. Unplug the coaxial cable connecting the TV and the TV outlet. Plug the T-splitter into the TV outlet.
4. Plug the TV coaxial cable into the T-splitter. Plug the CableLAN coaxial cable into the T-splitter.
5. Plug the Ethernet cable into the *Corinex CableLAN Adapter* and the Ethernet slot or card on your PC.

The *Corinex CableLAN Adapter* is equipped with an automatic switch enabling an Ethernet slot or card on the PC to be connected to the Adapter via a standard cable or to connect a cable modem or DSL modem via a "cross cable" to the Adapter.

If there is an existing Docsis (Data Over Cable Service Interface Specifications) system already installed, special precautions, as described further have to be taken.

It is possible to cut off the Docsis functions and insert the CableLAN at the incoming node. You can still use the Docsis Modem’s access capacity for Internet communications. This requires the use of a passive diplexer filter. See the installation example in the following pictures.


Before installing CableLAN
TV
TV
TV
TV
TV
TV
Cable TV + Cable DOCSIS
Ethernet
DOCSIS
modem
PC



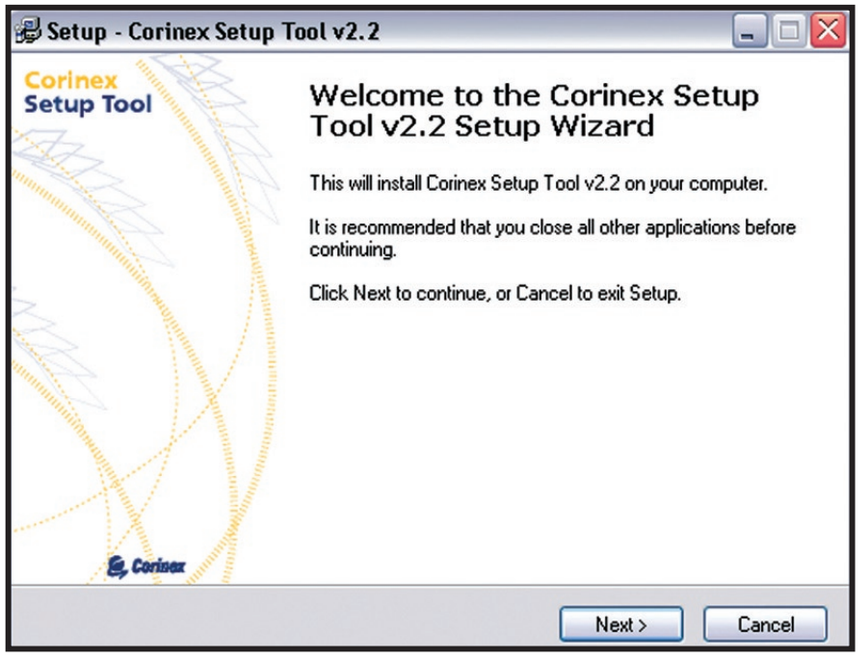
You can find information about possible filter vendors on the Corinex Authorized Powerline Partners Program web site (cappp.corinex.com).

2.5 Installing the Setup Tool

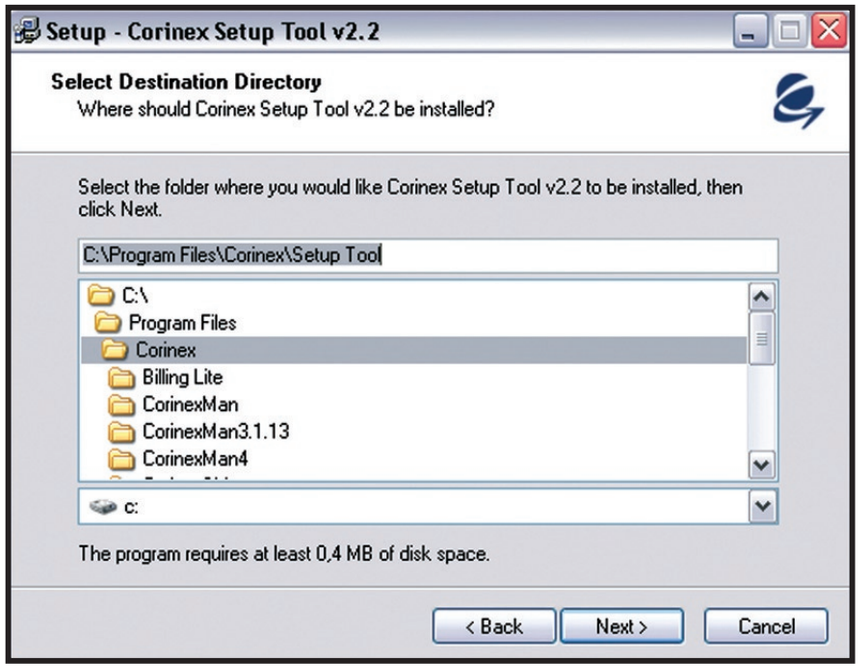
1. Insert the installation CD. The CD should automatically start the installation process. If the installation program does not start automatically, start the application by selecting **My Computer**, usually found on the desktop or Laptop start up screen. Navigate to the **CD** drive and double click on the drive. The **Installation CD menu** will appear. Click on **Install Setup Tool**.

Note: By clicking on **Read Documentation** you can read the manuals and additional documents included on the installation CD.

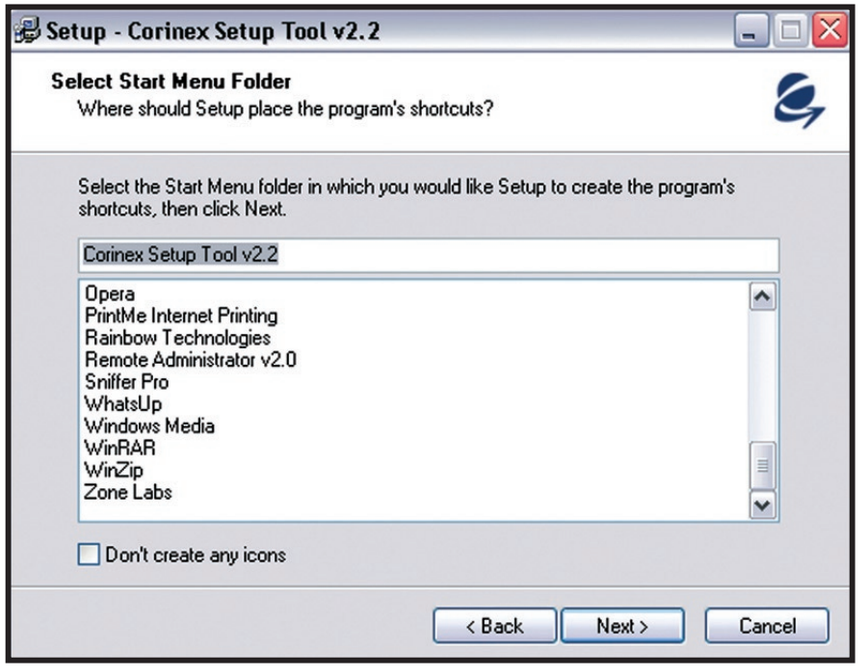
2. The following welcome screen will be displayed. Click **Next** to continue.


Setup - Corinex Setup Tool v2.2
Corinex
Setup Tool
Welcome to the Corinex Setup Tool v2.2 Setup Wizard
This will install Corinex Setup Tool v2.2 on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

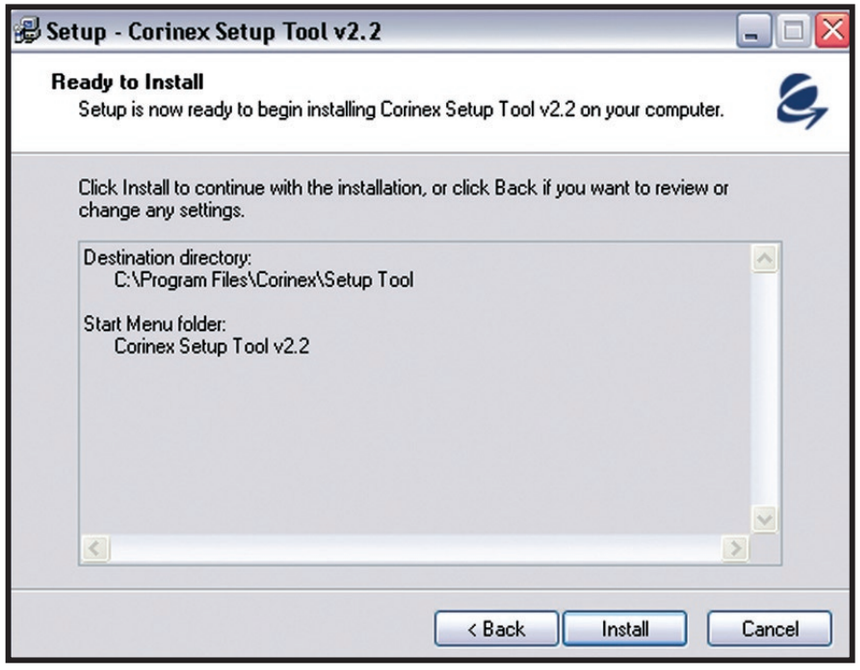
3. The next screen will ask where the Setup Tool should be installed. Click **Next** to continue.



4. This screen will ask where Setup should place the program's shortcuts. Select the Start Menu Folder or simply click **Next**.



5. The following screen will appear to inform you that Setup is ready to begin installing the Setup Tool on your computer. Click **Install**.


Setup - Corinex Setup Tool v2.2
Ready to Install
Setup is now ready to begin installing Corinex Setup Tool v2.2 on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination directory:
C:\Program Files\Corinex\Setup Tool
Start Menu folder:
Corinex Setup Tool v2.2
< Back
Install
Cancel

After the installation is finished, the Setup Tool will start automatically. Refer to chapter 3.1 for further instructions.

2.6 Testing the Setup

To verify that the connection is working correctly, use the standard **Ping** utility. In Windows, click on menu **Start** -> **Run**, then write the command "ping IPADDRESS -t", where IPADDRESS is the IP address of the computer to which the CableLAN adapter is connected to, e.g. **ping 192.168.4.1 -t** . (This command will be stopped by pressing keys CTRL+C).

- Ping the IP address of the computer to which the CableLAN adapter is connected to. If this fails, there is a problem with the Ethernet network card.
- Repeat the same process with the other cable device on the network.
- If all nodes can ping themselves, try pinging another cable device on the network. If this fails, there is a problem with connections on the cable. Try to check the connection to the cable outlet or use a different cable outlet.
- If the setup does not work, refer to the troubleshooting guide, but first, try unplugging the CableLAN device and reboot the computer as this sometimes fixes the problem.

2.7 Running the Setup Tool

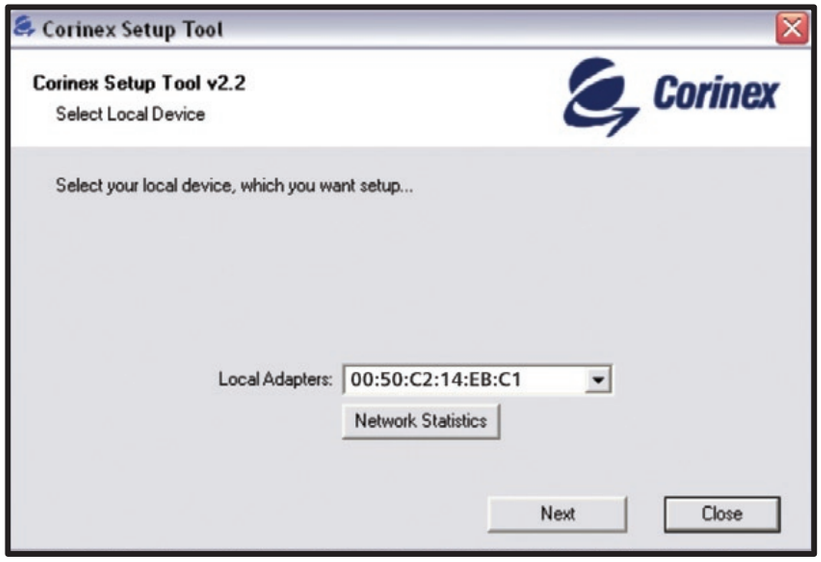
The setup so far allows transmission of data encrypted with a universal key. To set your private and personal encryption keys for the network, run the Corinex Setup Tool provided on the CD (refer to chapter 3.1 for details). This prevents anyone from intercepting your transmitted data.

3 User Guide

3.1 Setup Tool User Guide

The Setup Tool allows the user to setup a private and secure CableLAN network. Follow the steps on the screen of this guide and your secure network will be setup correctly.

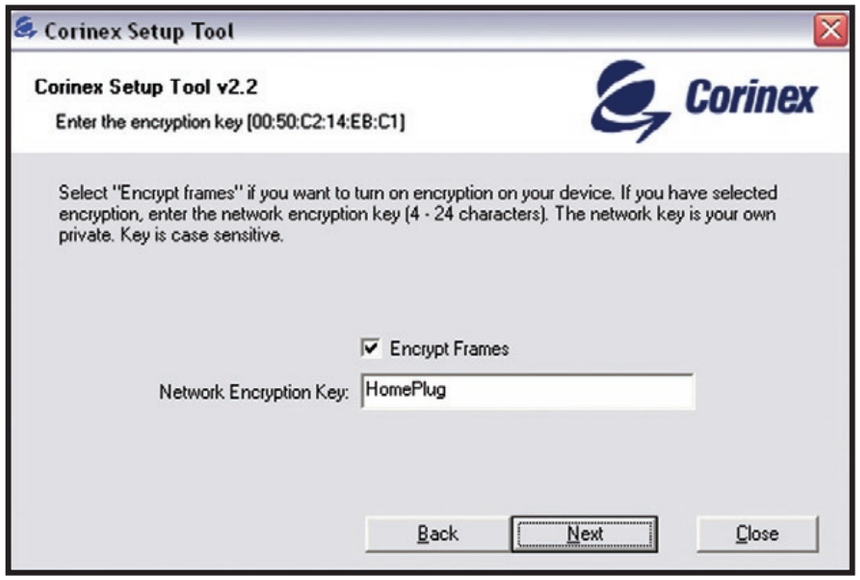
1. Make sure that your *Corinex CableLAN Adapter* is connected to the computer and start the Setup Tool from the **Start** menu by selecting the software folder and select **Corinex Setup Tool**. The following screen will appear.



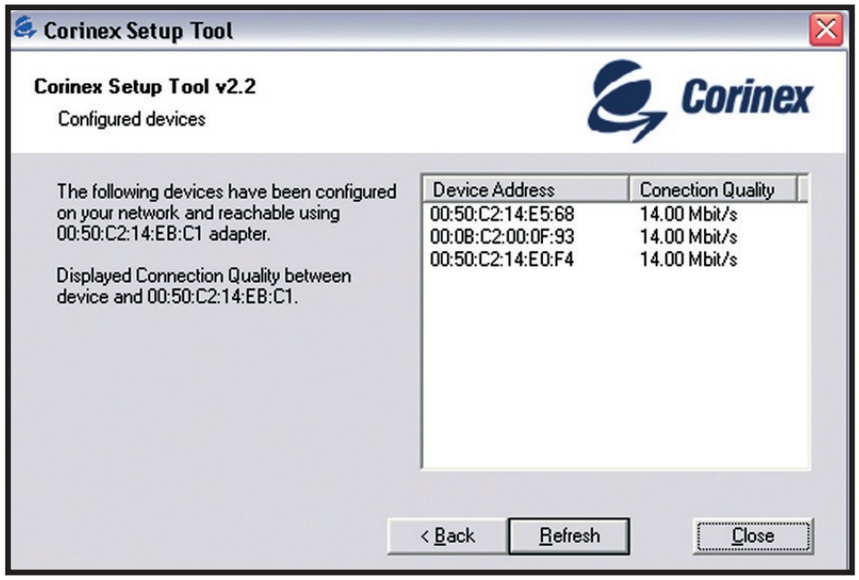
2. Detecting the device takes a few seconds. Click **Next**.

3. Now the following screen should be displayed. This is the screen where your network password is selected. Choose a password between 4 and 24 characters, the password is case sensitive so remember exactly how it was

typed as it will be needed for the next device being set up. Type your password in the **Network Encryption Key** box and click **Next**. If you don't want to use encryption, uncheck the box **Encrypt frames**.


Corinex Setup Tool
Corinex Setup Tool v2.2
Enter the encryption key (00:50:C2:14:EB:C1)
Corinex
Select "Encrypt frames" if you want to turn on encryption on your device. If you have selected encryption, enter the network encryption key (4 - 24 characters). The network key is your own private. Key is case sensitive.
Encrypt Frames
Network Encryption Key:
HomePlug
Back
Next
Close

4. Click **Next** again to program the *Corinex CableLAN Adapter* with the new encryption key. This will take a few seconds. The next screen will look similar to the following screen. The white box will list the MAC addresses of all other installed CableLAN devices on the network that are programmed with your chosen network password. If no other devices have been programmed, the list will be empty. If you use also other than Corinex HomePlug certified devices in the network, these devices may be set at the default status. This default setting makes sure that HomePlug devices find each other in a network and connect and communicate automatically with each other. In order to generate your private and secure network, all HomePlug certified devices in the network must be set to the same network encryption key, either at the default key "HomePlug" or your own selection.



The adapter with the MAC address 00:50:C2:14:EB:C1 acts as local device in the network and identifies the devices shown under ***Device Address*** *in the window as belonging to the network. The function and performance of the devices between the local device / adapter 00:50:C2:14:EB:C1 and the devices identified in the network is displayed in the window under* ***Connection Quality****.*

5. All devices in your network must be programmed with the same network encryption key. Run this utility on all computers with a CableLAN networking device attached. If you have a CableLAN device that is not normally connected to a computer, it must first be connected to a computer and set up with a network encryption key.

3.2 Corinex CableLAN Adapter

The *Corinex CableLAN Adapter* introduces a new and innovative solution for high speed communications, using the coax cable as a medium for communication. This unique technology offers users a wide range of networking options by using digital CableLAN technology enabling up to 14 Mbps of "traffic" between nodes within the network.

- Enables users to connect individual PCs or other devices with Ethernet communications links into a local area network through coaxial wires.
- Enables PC file and application sharing
- Enables peripheral and printer sharing through the CableLAN network
- Enables shared broadband Internet access
- Enables sharing the bandwidth for multimedia payloads including voice, data, audio and video
- Enables gaming competition within the reach of the coaxial wires network
- Eliminates the requirement for special data cable wiring
- A real cost-effective and reliable solution for high speed communications in any home or small office

You can combine this type of adapters with the Corinex full line of powerline products. This manual has been prepared for *Corinex CableLAN Adapters* for use in combination with PCs or laptop computers.

Example

The connection of two computers over the CableLAN by using two *Corinex CableLAN Adapters:*

1. Install *Corinex CableLAN Adapter* on each one of the two computers (see Installation Guide).
2. For connectivity enter the properties for this connection (see the user guide of your operating system) and set up an IP address manually. For example: 192.168.4.1 mask: 255.255.255.0 and another PC set up 192.168.4.2 mask: 255.255.255.0
3. You can check the connection by a simple ping procedure addressing the IP address of the second PC.

3.3 FAQ

1. Is the *Corinex CableLAN Adapter* still working if there is an electricity blackout? And will it resume the transmission automatically after the power comes back?
Corinex CableLAN Adapters are operational, when the connected computers are rebooted and the power is back on.

2. Once the electricity is on after blackout, is the CableLAN Adapter put into operation "automatically".
Yes, as soon as the computers are running again. If there is a problem, unplug the adapter and plug it back into the connection slot.

3. Is there any cross talk or interference issue when using *Corinex CableLAN Adapters?*
Within a PC we don't see any interference with any other card and/or system. OFDM is a technology, which reduces any influence coming from another device that is connected to the coax cable network. The Corinex adapters have also been FCC and EC approved. Please see also question Nr. 5.

4. In case the PCs are at different floors of the same building, can they use the CableLAN device for data transmission ? And how does it work?
CableLAN devices use the coax cable as a medium for communication. If the coax cable wires between the two outlets used for communications in this case are connected with each other and the maximum distance is about 700m, it works fine.

5. Can we use a *Corinex CableLAN Adapter* in a DOCSIS cable modem network?
Yes, but you will need a special filter as explained in chapter 2.4.

3.4 CableLAN Adapter Specifications

The following table lists the product specifications for the *Corinex CableLAN Adapter*.

Standard compliance	HomePlug v 1.0.1 compatible
	Windows 98/Me/2000/NT/XP, Mac OS X and Linux compatible for the Setup Tool
	IEEE 802.3
	UL and /or international standards approved
	FCC and / or CE approved
Protocol	Ethernet / HomePlug 1.0.1
Speed	Up to 14 Mbps (CableLAN), 10 Mbps (Ethernet)
Cabling type	Standard AC cable, Ethernet cable, Coax jumper cable
LED status lights	Link and Activity on CableLAN, Link/Activity on Ethernet
Unit dimensions	106 mm L x 148 mm W x 47 mm H
Power cable	6`/1.8 m
Coax jumper cable	with F/M and antenna / F type connectors
Weight	0.69 lbs/0.313 kg

Interface	Standard Ethernet port RJ 45, 10 Mbps F type CableLAN Connector
Impedance	at CableLAN port 75 Ω
Frequency used	4-21 MHz
Modulation	OFDM
Medium Access	Half duplex, collision based
Power emitted into CableLAN	57 dBmV (707 mV)
Maximal attenuation	40 dB
Power input	110/120 or 220/240 V AC, 0.5A
Power Consumption	3 W
Safety & EMI	USA: UL/FCC part 15 / Europe: CB/CE
Operating temperature	32°F to 131°F (0° to 55°C)
Storage temperature	-4°F to 158°F (-20° to 70°C)
Operating humidity	10% to 85% non-condensing
Storage humidity	5% to 90% non-condensing

4 Troubleshooting Guide

Computer networking can sometimes be "tricky" when many components must work together for the ultimate network system to function properly. With the right tools the problems are usually easy to fix. The following tools, available on your computer or the Installation CD, will get you started.

- Setup Tool (from the Corinex CableLAN Installation CD)
- Ping (from the command prompt, see section 2.6)
- ipconfig (WinNT/2000/XP), winipcfg (Win9x/Me) (from the command prompt)

If it just doesn't work...

*1. Check that the LEDs on the CableLAN side labelled **LINK** on all devices are on, if not:*

- Check the coaxial and power cables.
- Make sure the power outlet is working by plugging something else into it.
- Make sure the coaxial outlet is working and connected to other outlets used for CableLAN. If this fails as well, try 2. – 5.

2. Check the Ethernet cables:
The *Corinex CableLAN Adapter* has a LED on the Ethernet side labeled **LINK**. If it is not on:

- Check if the device at the other end of the Ethernet cable is switched on.
- Try a different Ethernet cable.

3. Check the connection between the Corinex CableLAN Adapter and the coax cable network.

4. Check that the devices exist on the network:

Start the **Corinex Setup Tool**, click **Network Statistics** and see if all devices on your network are found. If all devices are listed, skip this section. If a device is missing:

- Make sure all computers have only one active network slot.
- Make sure the *Corinex CableLAN Adapters* are plugged straight into the cable network through the coax jumper cable.
- Unplug all *Corinex CableLAN Adapters* and plug them back in again, one by one. Run the Setup Tool again.
- The devices may be programmed with different passwords. Setup all devices with a new password as described in the chapter 3.1.

5. Check that the Corinex CableLAN Adapters are detected by TCP/IP:

From the command prompt, run ping and type the computer name or IP address of the computer you are working on [ping your computer name]. This should return 4 good packets. Now try to ping another computer on the network. If a timeout occurs:

- Go into the TCP/IP properties and check that the buttons for automatically obtaining IP addresses and gateway are checked. If not, make sure that both computers are on the same subnet.
- Run **ipconfig/all** from the command prompt on all computers to verify that all computers have valid IP addresses on the same subnet.
- The IP tables may be corrupted, reboot all computers and try again. If these tests work, you have basic connectivity and can use all network services. If this does not work, you may have a faulty device. Please contact your reseller or local distributor.

I cannot share my Internet access…

To share broadband Internet access, you need a router connected to your Cable/DSL modem. This will provide a firewall with a single IP address that all computers will use as a gateway. Connect a *Corinex CableLAN Adapter* to your Cable/DSL router.

I have got all that, it still doesn't work...

- Make sure that your TCP/IP settings are set to automatically obtaining IP address and gateway address.
- Switch off all computers and unplug the CableLAN devices, now plug your CableLAN Adapter back into the router before switching on your computer. This will ensure that the computer's IP address will be obtained from the router.
- Now open the web browser, if the "Not Found" page appears, try to check your LAN settings in the Internet Options of your web browser.

It works but it is slow...

A slow connection is almost always due to poor cable connection.

- Make sure the device is connected straight into the cable outlet and not into a splitter or extension cable.
- Try another cable outlet.

If you still have trouble, you may contact the Corinex "help desk" by sending an e-mail to: support@corinex.com
- describing your problem
- reporting the devices types and manufacturing numbers of your network adapters
- giving us a phone number under which you may be reached, inclusive a convenient time to call